MODIS Technical Team Meeting
Thursday, June 5, 2003
Building 33, Room E125

Vince Salomonson chaired the meeting. In attendance were Bob Barnes, Bill Barnes, Jack Xiong, Robert Wolfe, Eric Vermote, Ed Masuoka, Barbara Conboy, Michael King, Skip Reber, Dorothy Hall, Steve Kempler, and Shaida Johnston, with Yolanda Harvey taking the minutes.

1.0 Upcoming events

- MODLand Workshop, July 15-16 (tentative), location not yet set.
- IGARSS 2003, July 21-25, 2003, Toulouse, France (abstracts deadline past). http://www.igarss03.com/
- 10th International Symposium on Remote Sensing by The International Society for Optical Engineering (SPIE). September 8-12, 2003, Barcelona, Spain (abstracts deadline past). http://www.spie.org/info/rs
- MODIS Science Team Meeting, September 30 – October 3, 2003, location not yet set.

2.0 Meeting Minutes

2.1 General Discussion

Salomonson reported that he has noticed he has been scheduled to give a presentation on MODAPS to the Earth Science Subcommittee for Information Systems meeting on July 9-10, 2003. He is attempting to contact Martha Maiden to get further guidance on what specifics are being sought in the presentation, but the emphasis is to be on "lessons learned."

Johnston reported that because of the delayed start on Oceans data reprocessing, she has been considering how the version numbering system is affecting our users. She wonders whether it still makes sense to use the system in the forward and reprocessing streams, and ultimately wants the archive to stay clean.

Johnston is also still inquiring about algorithm changes that need to be submitted for Aqua reprocessing.

Johnston asked Xiong whether or not the PCR for the Sun-Earth correction in L1B data needs to go through a science test before being implemented. Salomonson noted that only the Oceans group would notice any change, and Xiong said that even then, the change for them would be very small, in the order of a fraction of a percent, so he was not sure that a test was needed. Johnston suggested making the change in the Terra forward stream first instead of the reprocessing scheme. Wolfe said that he would be more comfortable doing a test before putting it into reprocessing, and possibly forward stream, as a blunder-protection method. Xiong said that before MCST submitted those changes, they did a comparison of data with and without the change to make sure that nothing was hurt (this is standard procedure). He wasn't sure about a change science-wise, since the change is so small. Johnston said that she's not sure that we need to put the change in during the Land and Atmospheres reprocessing, and so we could instead

schedule a one-data-day test before it goes into the forward stream. It will also go through a science test before the Oceans reprocessing. Masuoka asked if MODAPS should test it in the data before delivering the data to the DAAC, and Johnston said yes.

Salomonson asked Conboy if there were any major conflicts with the next MODIS Science Team Meeting dates. Conboy reported that the Atmosphere's group might be under-represented. Paul Menzel will be in Perth, Australia, starting in mid-August, and Michael King may be in Africa for most of September.

2.2 Instrument Status

2.2.1 Aqua MODIS

Salomonson noted that at the recent Aqua Science Working Group (ASWG) meeting the need for MODIS to do a roll maneuver to look at the moon every month was questioned. Xiong replied that they do that once per month because it is critical for rvs; he said that he would send a more detailed explanation to Salomonson and Tom Pagano via email to clarify the essential nature of the maneuver.

King asked if we know how to register the focal planes on Aqua MODIS (for the geolocation shift), and Wolfe suggested that the data aggregation of the bands could be changed or the data could be resampled (Wolfe will work with Hucek on the different approaches). Salomonson noted that it is a lingering issue and it needs to be resolved. Xiong reported that MCST has been doing band-to-band registration trending, including trending from pre-launch. All of the pre-launch trending has been sent to Wolfe for geolocation reference. King said that his algorithms use data from all four focal planes, and he hasn't taken into account that some of them might be out of alignment. Vermote asked if they could do a test of the different approaches to handling the misregistration, and Masuoka noted that this is something we probably want to work out before the Aqua reprocessing. We just need to determine if this fix should go into L1A/L1B data, or only the science algorithms. King said that this is something that should be fixed all around (in L1A/L1B). Wolfe said that we need to develop a plan for testing different approaches to the handling the misregistration.

Salomonson noted that the AMSR-E group has expressed an interest in having the spacecraft rotated/rolled to 30 degrees even though the spacecraft has been programmed not to go beyond 20 degrees during a lunar roll maneuver. Bob Barnes said that on a lunar maneuver, the variable we most want to keep fixed is the phase angle, which limits us to no more than one lunar measurement per month. Xiong noted that the 20-degree further limits the acquisition of the moon during the maneuver to ten times per year. The AMSR-E interest will have to be explored further.

2.2.2 Terra MODIS

Xiong reported that he would attend a meeting on June 6, 2003, with Santa Barbara on modeling and study of the Solid Diffuser Screen issue. The door has been closed for over a month, and he said that he wants to figure out when it can be opened again. He did note that MODIS is collecting science data as planned. Once a strategy has been defined, they can use the screen data to calibrate the land data. There might also be a meeting on Tuesday, June 10, 2003, to discuss ongoing tests. Salomonson asked if it has been hard to get convergence, and Xiong said yes, it's been difficult because there are so many issues, plus they're working on converging SeaWiFS data with MODIS Oceans data.

Xiong reported that he attended a meeting on the next Terra Deep Space Maneuver (DSM), and they're aiming for having it sometime between August and December of this year. The DSM will also include a look at the Moon. Bill Barnes noted that SeaWiFS might be shut off in December, so the maneuver needs to happen before then. Bob Barnes noted that other spacecrafts might also coordinate with SeaWiFS and Terra on the maneuver. Xiong reported that Miami sent the data from the M1 testing, including trending from pre-launch.

2.3 DAAC

Kempler reported that Aqua processing is on the leading edge, and Terra processing is running an aggregated 4.4x rate for May.

They've completed upgrades to increase throughput to MODAPS. He also noted that they've turned off data reprocessing because of a backlog until MODAPS gives them the ok to resume pushing data. (Masuoka was unaware of anything being turned off but gave Kempler the OK to send reprocessing data; on further checking Masuoka determined that the subscription to MODAPS was turned off while the DAAC filled in missing data days.)

On the issue of MODIS code distribution to the public, Kempler said that he had a discussion about this on Tuesday June 3, 2003, and it was decided that Pat Coronado will be the distribution point, and Masuoka is to provide Coronado with PGEs. King said that he has been getting messages about PGE06 – people want help because of confusion with version numbers. Salomonson said that those users might need to contact the developer for a definitive answer, and Johnston cautioned that that strategy could end up taking up a lot of resources. Salomonson acknowledged the risk, and said that it's one we'll have to accept, since the risk of not doing it is that the data get used wrongly. Kempler noted that Coronado is taking on a bigger job than he originally expected. Salomonson said that his is a lurking problem, and we're going to have to do something about it. Johnston said that we might consider allocating some resources to deal with this. As for MODAPS delivering PGEs to Coronado, Masuoka said that SDST has sent the most recent versions of 43 PGEs to Coronado. Once he has those packages, everything should be there, which in turn should help the users. Some people are having problems with the acronyms used, but all the necessary stuff will be there. Kempler said that once those deliveries are complete, we should make an announcement. Masuoka added that now that deliveries are automated, whenever a package goes into production it is cued up for delivery and goes onto an ftp site. King asked if the site serves direct broadcast users, and Masuoka said yes, and it also provides L3 data products.

2.4 MODAPS

Masuoka reported that he sent an email to King, Esaias, Salomonson, and Justice on the POP review of ESDIS, which concluded that ESDIS needs new tape drives for MODIS product-volume growth. MaryAnn Esfandiari, the new ESDIS project manager, was confused about data storage procedures, so if there is some reason that we need to keep a product for longer than the standard six month window, we need to give her the reason. Essentially, MODIS isn't asking for anything special in our storage requirements. Kempler suggested that it might be a problem with how the data are archived. Masuoka concluded that, barring technical issues, we are happy with what every other project has for data storage (there was a general consensus of attendees at the MTT meeting on this).

Masuoka reported that they got the near real-time processing system all sorted out for MODIS. The file wouldn't compile at first, but once that was fixed and running, we found that the products look similar and good. Coast Watch is doing MODIS QA for NOAA, and we're working on getting production straightened out. The NOAA system is now using the L1B package prepared for Direct Broadcast users by Chris Lynnes.

Masuoka reported on the plans for remodeling the GSFC Building 32 lobby to display the satellites, instruments, data, and products related to the data processing happening in the building. He said that they will be getting models of the Terra and Aqua satellites, moving the MODIS model there, and put up a lot of displays/storyboards on these and other projects. The MODIS model will be near the elevator. Flat panels (plasma screens) along the wall will tell visitors the whole story of how products are created, archived and distributed to the science community. Masuoka said that there would be space for displays of interesting science results from MODIS and other instruments that are being processed in Building 32. Anything that fits well with the science will be an option. MaryAnne Esfandiari is heading up the group to design the lobby displays. They are looking for stuff that will impress visitors. This should be a big improvement, and will hopefully help visitors understand what goes on in the building (and center).

2.5 Cryosphere

Hall reported that she participated in an NSIDC teleconference meeting on volumes and loads, and forgot to mention that the monthly snow and sea ice products will be included in Collection 5. Wolfe agreed that it is important to include those products in their estimate of volumes and loads. The NSIDC has too much network capacity for what we're sending them now, but the product volumes and loads will increase in the near future. At 15G a day right now, they won't hit top levels until Collection 5 reprocessing begins next year. Hall said that she would send an email on that to Wolfe reminding him of the planned monthly products.

2.6 Atmospheres

King noted an interesting Earth Observatory image of the day that was a MISR aerosol level-3 product. He also reported that he is supposed to give a 1.5-hour lecture on NASA's aerosol, cloud, and radiation budget activities, so he's including MISR and MODIS aerosols, MODIS clouds, and ERBE/CERES Earth Radiation Budget.

King reported that the L3 atmospheres code was delivered and is in production. He said that he saw the first 8-day results today, and from the tests it looks like it is going well, so they're moving forward with it. Some statistics looked miscalculated in 8-day and monthly, even though they don't affect images (so the data can still be made into animations and movies), but the problem still needs to be fixed. As far as Collection 5 updates go, Atmospheres has a long list of science code changes, but they will not be ready for a November Aqua reprocessing. A good insertion point could be when Aqua catches up with Terra (around April of 2004). They're testing changes extensively. Johnston said that Aqua reprocessing will be a consistent year, and so they will want to clean up every issue they know of. Salomonson said that he would like to be able to report in January of 2004 that we are reprocessing Aqua data, and Johnston assured him that we would be able to do so. Masuoka reported that we should have a year of data done for those PGEs that are ready to go in November 2003.

3.0 Action Items

3.1 New Action Items

3.1.1 Wolfe to work with Hucek on the different approaches to aggregating the Aqua MODIS focal planes for geolocation purposes.

3.1.2 Xiong to email an explanation of MODIS' once-per-month roll maneuver (as it affects rvs) to Salomonson and Tom Pagano.

3.2 Old Action Items

3.2.1 King and Kempler to work together on getting ESDTs for the new Atmospheres L2 data product.
Status: Open.

3.2.2 Kempler to coordinate with Oceans group on creating documentation for the DAAC on the new Oceans L1A data subsets.
Status: Open.

3.2.3 Tech Team to further discuss TRW using MODIS data for validation of the NPP/NPOESS production process.
Status: Open.

3.2.4 PIP to develop list of items to go into work plan for the new contract (EMD).
Status: Open.

3.2.5 Ed Masuoka to invite a NOAA delegate to the weekly MODIS Tech Team meetings or the PIP meetings.
Status: Open. Masuoka sent the invitation to Gene Legg and Bruce Ramsay.